UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,365	07/30/2001	Zhi-Li Zhang	45621/FLC/F179	2533

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CHRISTIE, PARKER & HALE, LLP
PO BOX 7068
PASADENA, CA 91109-7068

EXAMINER
WALSH, JOHN B

ART UNIT	PAPER NUMBER
2151	

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2006*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some *   c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2.   Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention.

        Claim 19 recites the database including the path level data and the database including the

link level data. This limitation implies there are two databases, one for the path data and one for

the link data. However, claim 19 is dependent upon claim 1 which recites only a single database

having the path and link data.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. 6,590,867

to Ash et al.

As concerns claim 1, a method for allocating bandwidth within network domain by a

network server operably coupled a network domain edge node, comprising: providing a database

(column 1, lines 36-38) operably coupled to the network server, the database including path-level

data comprising Quality of Service (column 5, line 18; column 2, line 14) information for paths

within the network domain and link-level data (column 1, lines 36-38) comprising QOS

information for a links within the network domain, each of the paths comprising a plurality of

links; receiving by the network server from the network domain edge node a flow request

(abstract, lines 1-4) for the path; and satisfying by the network server the flow request using

path-level data if the network server determines the network server can satisfy the flow request

using the path-level data; and satisfying by the network the flow request using the link-level data

if there is a lack of path-level data and the network server determines the network server cannot

satisfy the flow request using the path-level data (column 5, lines 13-34).

As concerns claims 2 and 6, wherein the path-level data includes for each path unused

bandwidth allocated to the path and a path state (column 2, lines 5-8), the method further

comprising satisfying by the network server the flow request using the unused bandwidth if the

requested path is not in a critical state and the requested path has enough unused bandwidth to

satisfy the flow request (column 2, lines 5-8).

As concerns claims 3 and 7, wherein the link-level data includes for each link quotas

(column 3, line 58) of bandwidth available to the link, the method further comprising allocating

(column 3, line 22; column 3, lines 6-16) by the network server to each link along the requested

path a quota of bandwidth from the quotas of bandwidth available to the link if the requested

path does not have enough unused bandwidth to satisfy the flow request (column 5, lines 13-34).

As concerns claims 4 and 8, wherein the link-level data further includes for each link a

link state and the path-level data further includes for each path a set of critical links (column 3,

lines 58-59; particular links may be deemed critical) along the path, the method further

comprising allocating (column 3, line 22; column 3, lines 6-16) by the network server bandwidth

to each link (column 3, line 1; column 3, lines 10-12; column 5, lines 17-18) in the set critical

links from unused bandwidth reclaimed from another path on each link.

As concerns claim 5, a method for allocating bandwidth within a network domain by a

distributed network server, the distributed network server including a central network server and

a plurality of edge network servers, comprising: providing a plurality of path-level databases

(column 1, lines 36-38) operably coupled to the plurality of edge network servers, the path-level

databases including path-level data (column 1, lines 36-38; multiple routers with each router

having a database, therefore multiple databases) comprising Quality of Service (column 5, line

18; column 2, line 14) state information for paths within the network domain; providing a link-

level database (column 1, lines 36-38; column 5, lines 30-40; routers have databases for the link

and path data) operably coupled to the central network server, the link-level database including

link-level data (column 1, lines 36-38) comprising Qos information for links in the paths within

the network domain, each of the paths comprising a plurality of links; receiving by the

distributed network server from a network domain edge node operably coupled to an edge

network server a flow request (abstract, lines 1-4) for a path within the network domain;

satisfying by the distributed network server the flow request using the path-level data if the

network server determines the distributed network server can satisfy the flow request using the

path-level data; and satisfying by the distributed network server the flow request using the link-

level data if the network server determines the distributed network server cannot satisfy the flow request using the path-level data (column 5, lines 13-34).

As concern claim 9, the method of claim 7, the method further comprising rejecting by the edge network server the flow request if a link along the path does not have a quota bandwidth available to the link for satisfying the flow request (column 6, lines 12-13).

As concerns claim 10, a data processing system adapted allocate bandwidth within a network domain, comprising: a database (column 1, lines 36-38) including path-level data comprising Quality of Service information (column 5, line 18; column 2, line 14) and link-level data comprising Qos information for a path within the network domain, each of the paths comprising a plurality of links; a processor (inherent server has a processor); and a memory (inherent server has memory) operably coupled to the processor and having program instructions stored therein, the processor being operable execute the program instructions, the program instructions including: receiving from a network domain edge node a flow request (abstract, lines 1-4) for the path; satisfying the flow request using the path-level data if the flow request can be satisfied using the path-level data; and satisfying the flow request using the link-level data if there is a lack of path-level data and the flow request cannot be satisfied using path-level data (column 5, lines 13-34).

As concerns claims 11 and 15, wherein the path-level data includes unused bandwidth allocated (column 2, lines 5-8) to the path and a path state, the program instructions further including satisfying the flow request using the unused bandwidth if the path is not in a critical state and the path has enough available unused bandwidth to satisfy the flow request (column 2, lines 5-8).

As concerns claims 12 and 16, wherein the link-level data further includes quotas of

bandwidth available to a link (column 3, line 58), the program instructions further including

allocating (column 3, line 22; column 3, lines 6-16) to each link along the path a quota of

bandwidth from the quotas of bandwidth available to the link if the path does not have enough

unused bandwidth to satisfy the flow request (column 5, lines 13-34).

As concerns claims 13 and 17, the data processing system of claim 12, wherein the link-

level data further includes a link state and the path-level data further includes a set of critical

links (column 3, lines 58-59; particular links may be deemed critical) along the path, the program

instructions further including allocating (column 3, line 22; column 3, lines 6-16) bandwidth to

each link (column 3, line 1; column 3, lines 10-12; column 5, lines 17-18) in the set of critical

links from unused bandwidth reclaimed from another path on each link.

As concerns claim 14, a computer readable media embodying program instructions for

execution by a computer, the program instructions adapting a computer to allocate bandwidth

within a network domain, program instructions comprising: accessing a database (column 1,

lines 36-38) including path-level data (column 1, lines 36-38) comprising path Quality of Service

information (column 5, line 18; column 2, line 14) and link-level data (column 1, lines 36-38)

comprising link Quality of Service (column 5, line 18; column 2, line 14) information for a path

within the network domain, the path level data being distinct from the link-level data (inherently

distinct since the link-level data is drawn to the links and the path-level data is drawn to the

path), each of the paths comprising a plurality of links; receiving from a network domain edge

node a flow request (abstract, lines 1-4) for a path; satisfying the flow request using the path-

level data if the flow request can be satisfied using the path-level data; and satisfying the flow

request using the link-level data if there is a lack of path-level data (column 5, lines 13-34).

As concerns claim 18, a method for allocating bandwidth within a network domain by a

bandwidth broker operably coupled to a network domain edge node, comprising: providing a

network QoS state database (column 1, lines 36-38) operably coupled to the bandwidth broker,

the network QoS state database including: unused bandwidth allocated to the path (column 2,

lines 5-8); a set of critical links (column 3, lines 58-59; particular links may be deemed critical)

along the path; and a path state (column 3, line 66); and link-level data (column 1, lines 36-38)

for links along the path, wherein the path-level data and the link-level data is distinct (inherent

since the path data is drawn to the path and the link data is drawn to links), the link level data

including: QoS information for links within the network domain (column 2, lines 9-10); quotas

of bandwidth available to a link (column 3, line 58); and a link state (column 3, line 59);

receiving by the bandwidth broker from the network domain edge node a flow request for the

path (abstract, lines 1-4); satisfying by the network server the flow request using the unused

bandwidth if the path is not in a critical state and the path has enough unused bandwidth to

satisfy the flow request (column 5, lines 15-32); allocating by the network server to each link

along the path a quota of bandwidth from the quotas of bandwidth available to the link if the path

is not in a critical state and the path has enough unused bandwidth to satisfy the flow request

(column 3, line 1; column 3, lines 10-12; column 5, lines 17-18); and allocating by the network

server bandwidth to each link in the set of critical links from unused bandwidth reclaimed from a

another path on each link if the path is in a critical state (column 5, lines 13-34; column 5, lines

51-55).

As best understood concerning claim 19, a database (column 1, lines 36-38).

Response to Arguments

5.   Applicant's arguments filed June 26, 2006 have been fully considered but they are not

persuasive.

The applicant argues Ash does not disclose a database. Ash at column 1, line 37 recites "a

database". This database maintains the network topology, which includes the path and link data.

The database of Ash appears to be stored at the router. The applicant's database, as shown in

figure 6, are separate from the routers, which is a distinguishing feature over Ash.

The applicant argues Ash does not provide for using the link-level data if there is a lack

of path-level data. Ash discloses satisfying a request using path level data, if this cannot be

satisfied another path is selected and the link-level data of that path is used to satisfy the request

(column 2, lines 1-16), therefore link-level data is being used to satisfy the request. Ash selects

another path, which is comprised of links, to satisfy a request if the first path does not satisfy.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

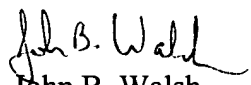the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to John B. Walsh whose telephone number is 571-272-7063. The

examiner can normally be reached on Monday-Wednesday from 5:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Zarni Maung can be reached on 571-272-3939. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John B. Walsh
Primary Examiner
Art Unit 2151